

## WORLD INTELLECTUAL PROPERTY ORGANIZATION International Bureau



## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 7:

G21F 5/015

A1

(11) International Publication Number: WO 00/52707

(43) International Publication Date: 8 September 2000 (08.09.00)

(21) International Application Number: PCT/US00/04853

(22) International Filing Date: 24 February 2000 (24.02.00)

(30) Priority Data: 99200593.4 2 March 1999 (02.03.99) EP

(71) Applicant (for all designated States except US): MALLINCK-RODT INC. [US/US]; 675 McDonnell Boulevard, P.O. Box 5840, St. Louis, MO 63134 (US).

(72) Inventor; and

(75) Inventor/Applicant (for US only): BECK, Ronald [NL/NL]; Dorpsstraat 180, NL-1721 BT Broek Op Langekijk (NL).

(74) Agent: BOONE, Jeffrey, S.; 675 McDonnell Boulevard, P.O. Box 5840, St. Louis, MO 63134 (US).

(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

#### Published

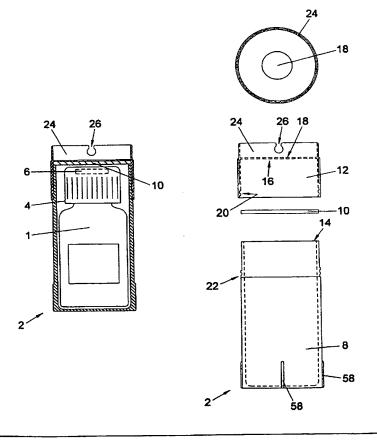
With international search report.

Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

(54) Title: HOLDER FOR RADIOACTIVE SUBSTANCES

#### (57) Abstract

Holder for radioactive substances, comprising a first container, a second container and shielding means, wherein the first container is provided with first sealing means for liquid and gas tight closing said container, wherein the second container is provided with second sealing means for liquid and gas tight enclosing the first container within the second container, wherein the second container is at least mainly made of yielding essential unbreakable material, preferably plastic material, wherein the shielding means are positioned at least partly on the outside of the second container and are essentially impenetrable for radioactive radiation.



### FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav	TM	Turkmenistan
BF	Burkina Faso	GR	Greece		Republic of Macedonia	TR	Turkey
BG	Bulgaria	HU	Hungary	ML	Mali	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MN	Mongolia	UA	Ukraine
BR	Brazil	IL	Israel	MR	Mauritania	UG	Uganda
BY	Belarus	IS	Iceland	MW	Malawi	US	United States of America
CA	Canada	IT	Italy	MX	Mexico	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NE	Niger	VN	Vict Nam
CG	Congo	KE	Kenya	NL	Netherlands	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NO	Norway	zw	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's	NZ	New Zealand		
CM	Cameroon		Republic of Korea	PL	Poland		
CN	China	KR	Republic of Korea	PT	Portugal		
CU	Cuba	KZ	Kazakstan	RO	Romania		
CZ	Czech Republic	LC	Saint Lucia	RU	Russian Federation		
DE	Germany	LI	Liechtenstein	SD	Sudan		
DK	Denmark	LK	Sri Lanka	SE	Sweden		
EE	Estonia	LR	Liberia	SG	Singapore		

onal Application No PCT/US 00/04853

# A. CLASSIFICATION OF SUBJECT MATTER IPC 7 G21F5/015

According to International Patent Classification (IPC) or to both national classification and IPC

### B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols) IPC 7 G21F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

WPI Data, PAJ, EPO-Internal

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 4 081 688 A (FRIES BERNARD A) 28 March 1978 (1978-03-28)	1-4,15, 16,18
Α	the whole document	8,13
Υ	GB 2 020 633 A (BYK MALLINCKRODT CIL BV) 21 November 1979 (1979-11-21) the whole document	1-4,15, 16,18
Α	US 3 673 411 A (GLASSER HERMAN) 27 June 1972 (1972-06-27) claims 1,6; figures 1-3	1,4,15, 16,18
Α	US 4 084 097 A (CZAPLINSKI THOMAS V ET AL) 11 April 1978 (1978-04-11)	1-4,8,9, 12,13, 15,16,18
	claims 1,2,5,9-11,13-15,19,20; figures 1-7	
	-/	

Y Further documents are listed in the continuation of box C.	Patent family members are listed in annex.
Special categories of cited documents :  "A" document defining the general state of the art which is not considered to be of particular relevance.	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the
"E" earlier document but published on or after the international filing date  "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)  "O" document referring to an oral disclosure, use, exhibition or other means  "P" document published prior to the international filing date but later than the priority date claimed	invention  "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone  "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.  "&" document member of the same patent family
Date of the actual completion of the international search	Date of mailing of the international search report
28 June 2000	05/07/2000
Name and mailing address of the ISA  European Patent Office, P.B. 5818 Patentlaan 2  NL - 2280 HV Rijswijk  Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  Fax: (+31-70) 340-3016	Authorized officer  Deroubaix, P
	Deroubaix, P

1



Inter. unal Application No PCT/US 00/04853

C.(Continu	ation) DOCUMENTS CONSIDERED TO BE RELEVANT	
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 3 993 063 A (LARRABEE EDWARD W) 23 November 1976 (1976-11-23) the whole document	1,5-7, 10,12, 14-18

1



# INTERNATIONAL SEARCH REPORT

Inter anal Application No PCT/US 00/04853

Publication	Patent		Publication
t date	memb	er(s)	date
A 28-03-19	78 NONE		
A 21-11-19		B05066 A	13-11-1979
		3 <b>72603</b> B	25-10-1983
		351979 A	15-03-1983
	•	527553 B	10-03-1983
		685579 A	15-11-1979
		876118 A	03-09-1979
		118373 A	16-02-1982
		637347 A	29-07-1983 15-11-1979
		918556 A	
		189779 A,B 425392 A	07-12-1979
		118494 B	03-03-1986
		728134 C	19-01-1993
		004231 B	27-01-1992
		161486 A	21-12-1979
		904029 A	12-11-1979
		278167 A	14-07-198
	ZA 7	902193 A	28-05-198
A 27-06-19	72 NONE		
A 11-04-19	78 NONE		
A 23-11-19	76 AU 1	495676 A	22-12-197
		842989 A	15-12-197
		061018 A	21-08-197
		626811 A	23-12-197
		268476 A	17-12-197
		315149 A	14-01-197
			25-03-197
			20-12-197 17-12-197
			30-05-197
	JP 52 NL 7 SE 7	2038793 A 2038793 A 2606469 A 2606588 A 4092546 A	25-( 20-1 17-1